(11) **EP 4 280 575 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 24.01.2024 Bulletin 2024/04

(43) Date of publication A2: **22.11.2023 Bulletin 2023/47**

(21) Application number: 23201920.8

(22) Date of filing: 28.04.2016

(51) International Patent Classification (IPC):

H04L 47/2441 (2022.01) H04L 61/4511 (2022.01) H04L 47/2483 (2022.01) H04L 61/58 (2022.01)

H04L 67/02 (2022.01) H04L 69/22 (2022.01) H04L 67/63 (2022.01)

52) Cooperative Patent Classifi

(52) Cooperative Patent Classification (CPC): H04L 69/22; H04L 47/2441; H04L 47/2483; H04L 61/4511; H04L 61/58; H04L 67/02;

H04L 67/63

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: 01.05.2015 US 201514702665

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:

16789776.8 / 3 308 503

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(54) MULTI-PHASE IP-FLOW-BASED CLASSIFIER WITH DOMAIN NAME AND HTTP HEADER AWARENESS

(57) An apparatus and method for classifying traffic data in a communication network based on IP flow. Traffic data in a communication network is monitored in order to detect an IP flow. A preliminary classification is assigned to the IP flow based on protocol information con-

tained in its first packet. Subsequent packets within the IP flow are further monitored, and the IP flow is reclassified based, in part, on the domain name of the responding server. Web pages can also be classified, and monitored to determine their response time.

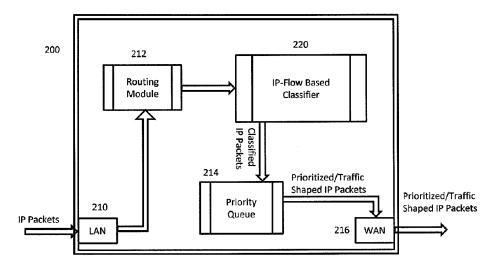


Fig. 2A



EUROPEAN SEARCH REPORT

Application Number

EP 23 20 1920

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35	
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	DOCUMEN IS CONSIDI	ERED TO BE RELEVANT		
Category	Citation of document with in of relevant pass	dication, where appropriate, ages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
х	US 2013/124738 A1 (LYNCH KENNETH F [US] ET	1.2.4.5.	INV.
	AL) 16 May 2013 (20		8-11	H04L47/2441
Y	* paragraph [0060]	•	3	H04L47/2483
A	figures 3, 10 *	range representation of the control	6,7	H04L61/4511
	* paragraph [0072]	*	•	H04L61/58
		- paragraph [0099] *		H04L67/02
	* paragraph [0106]			H04L67/63
	paragraph [0100]			H04L69/22
Y	US 2013/219048 A1 (ARVIDSSON AAKE [SE] ET	3	
-	AL) 22 August 2013	• •		
A	* paragraph [0046]	•	1,2,4-11	
		- paragraph [0052] *		
	paragraph [0043]			
A	WO 2015/014221 A1 (HIIAWET TECH CO LTD	1-11	
	[CN]) 5 February 20			
	* page 6 - page 8 *	(2020 02 00)		
	* page 12 - page 14	*		
	* page 15 - page 17			
A,P		1 (WANG SHUQIANG [CN]	1-11	
A, L	ET AL) 17 December			
	·	- paragraph [0076] *		TECHNICAL FIELDS
	* paragraph [0085]			SEARCHED (IPC)
	* paragraph [0110]			H04L
		- paragraph [0123] *		110411
		- paragraph [0123]		
	paragrap [0151]			
	The present search report has b	een drawn up for all claims		
	Place of search	Date of completion of the search		Examiner
	The Hague	11 December 2023	Tor	telli, Michele
	CATEGORY OF CITED DOCUMENTS	T : theory or principle	underlying the i	nvention
		E : earlier patent doc	ument, but publis	
x · par	ticularly relevant if taken alone ticularly relevant if combined with anoth	after the filing date ner D : document cited in	the application	
Y : pari doc	ument of the same category	L : document cited fo		
Y : pari doc A : tech O : nor		L : document cited fo		, corresponding

EPO FORM 1503 03.82 (P04C01)

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 23 20 1920

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-12-2023

								11-12-2023
10		Patent document cited in search report		Publication date		Patent family member(s)		Publication date
	U	S 2013124738	A1	16-05-2013	US	2013124738 A	L	16-05-2013
					US	2016087932 A		24-03-2016
15	ט	s 2013219048	A1	22-08-2013	EP			31-12-2014
					US	2013219048 A		22-08-2013
	_				WO	2013124763 A		29-08-2013
		0 2015014221				104348642 A		11-02-2015
20					US	2015365334 A	L	17-12-2015
					WO	2015014221 A		05-02-2015
	ט -	s 2015365334	A1	17-12-2015		104348642 A		11-02-2015
					US	2015365334 A	L	17-12-2015
25					WO	2015014221 A		05-02-2015
	_							
30								
35								
40								
45								
50								
	g							
	RM P0459							
	₹							

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82